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Running title: Noise-induced DNA damage in the rat adrenal gland

Keywords: adrenal gland; comet assay; DNA damage; loud noise; rat

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List of abbreviations: Analysis of Variance (ANOVA); Low Melting Point Agarose (LMPA); Multifactor Analysis of Variance (MANOVA); Normal Melting Point Agarose (NMPA); Reactive oxygen species (ROS).

OUTLINE OF SECTIONS

Abstract

Loud noise is generally considered as an environmental stressor causing negative effects on acoustic, cardiovascular, nervous and endocrine systems. In this study we investigated the effects of noise exposure on DNA integrity in rat adrenal gland evaluated by the comet assay. The exposure to loud noise (100 dBA) for 12 h caused a significant increase of DNA damage in the adrenal gland. Genetic alterations did not decrease 24 h after the cessation of the stimulus. An imbalance of redox cell status was hypothesized as responsible for the induction and persistence of noise-induced cellular damage.